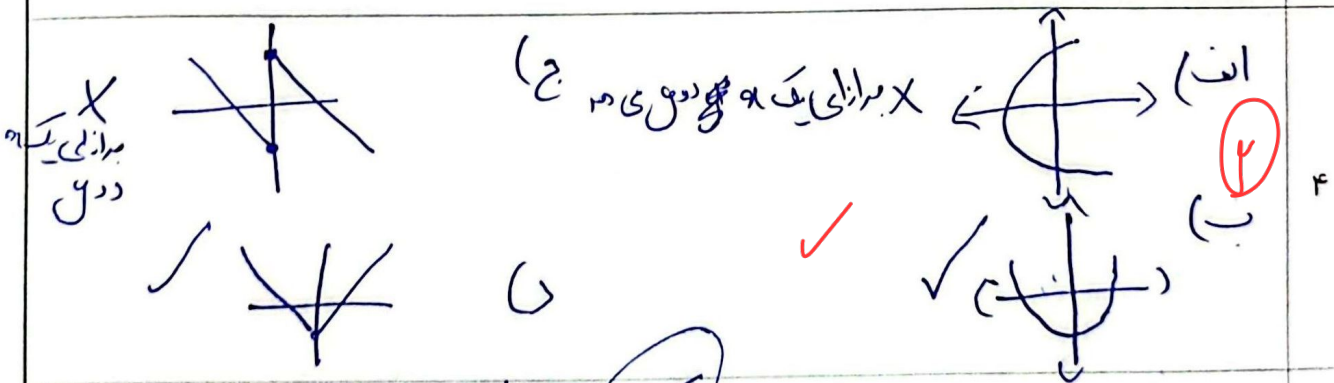


الف) $3ax - y = 9$, $2ax - 2y = 1$ $\rightarrow v_1 = 1$, $u = 2y = 1 \rightarrow \frac{ax}{y} = \frac{-2}{3}$
 $ax + 2y = -4$
 ب) $\frac{1}{ax} - \frac{1}{y} = -1 \xrightarrow{\times(-a)}$, $\frac{a}{y} - \frac{a}{a} = -a \Rightarrow \frac{a}{y} = 2 \rightarrow y = -1$
 $\frac{a}{y} = 2 \rightarrow \frac{a}{-1} = 2 \rightarrow a = -2$

$f = \{(a, xa), (1, a+1), (1, -2), (2, b)\} \Rightarrow a+1 = -2 \Rightarrow a = -3$
 $f(a) + 2f(2) = 3f(1) \Rightarrow -4 + 2b = -4 \Rightarrow b = 0$

$f = \{(-1, m^2 - 3m), (3, \omega), (-1, -2), (m+1, 2), (2, 4), (m^2 + 2, 4m+1)\}$
 $m^2 - 3m = -2 \Rightarrow m^2 - 3m + 2 = 0 \Rightarrow (m-1)(m-2) = 0$
 $m=1 \rightarrow (1, 4), (3, 0)$
 $m=2 \rightarrow (2, 4), (4, 9)$
 هیچ ستاره



الف) $y = -\sqrt{ax+1}$
 ب) $a_1 = \frac{y}{1-y^2}$, $a_2 = \frac{y}{1-y^2}$
 $\frac{y}{1-y^2} = \frac{y}{1-y^2} \Rightarrow \frac{y}{1-y^2} = \frac{y}{1-y^2}$
 باه است

تابع نیت $|y| = a \xrightarrow{a=1} 1 = |y| \Rightarrow y = 1$
 $y = -1$

(2)

ب) $y^3 + 3y^2 + 3y + 1 = 0 \Rightarrow (y+1)^3 - 1 = -a^3 - a \Rightarrow (y+1)^3 = 1 - a^3 - a$
 $\Rightarrow y = \sqrt[3]{1 - a^3 - a} - 1$ تابع

$f(x) = \frac{a^2 + f(x) + \omega}{a^2 + a + \omega} - f(x) = \frac{(a^2 + 1) + 1}{(a+1)^2 + 1} \xrightarrow{a = \sqrt{3}-2} f(\sqrt{3}-2) = \frac{(\sqrt{3})^2 + 1}{(\sqrt{3})^2 - 3} = \frac{4}{0}$

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$y - 2x + a = 0 \Rightarrow y = 2x - a$
 $f(x) = x^3 + ax + b$
 $\Rightarrow y = 2x - 1$
 $f(x) = x^3 + x - 2$
 تابع $2x - 1 = x^3 + x - 2 \Rightarrow x^3 - 2x + 1 = 0$
 $(x+1)(x^2 - x - 1) = 0 \Rightarrow x^2 - x - 1 = 0 \Rightarrow \frac{b}{a} = \frac{1}{1} = 1$

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$F = \{(2, a+b), (1, 2a), (-1, a-2b-1)\}$ تابع نیت

$a+b = 2a \Rightarrow b = a$

$2a = a - 2b + 1 = -a + 1 \Rightarrow 3a = 1 \Rightarrow a = \frac{1}{3}$

(2)

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$f(x) = \frac{ax^2 - a + c + 1}{bx + 2} \Rightarrow m = \frac{ax^2 - a + c + 1}{bx + 2} = bx^2 + 2a = ax^2 - a + c + 1$

$\Rightarrow (x-b)^2, (-a-2)x, (c+1) = 0 \Rightarrow b = x, a = -2, c = -1$

$a + b + c = -2 + 2 - 1 = -1 = 0$

(2)

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